

EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Shallow Soil Sample (0-2 ft)
- Shallow (0-2 ft) and Deep (4-5 ft) Soil Sample

Notes:

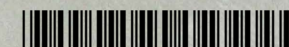
1. Data Qualifier: J = Estimated value.
 2. BGS = below ground surface.
 3. Light blue highlighted values are higher than maximum background concentrations (See Figure 8 for background soil data).
 4. Bold values are the maximum measured concentration for that compound.
- * The compounds shown in the figure are the compounds that were detected at a concentration greater than the screening level (See Tables 1 & 2).
The screening levels are:
Antimony - 0.27 mg/kg
4,4'-DDT - 0.021 mg/kg
Zinc - 46 mg/kg
Total LPAH - 29 mg/kg
Total HPAH - 1.1 mg/kg

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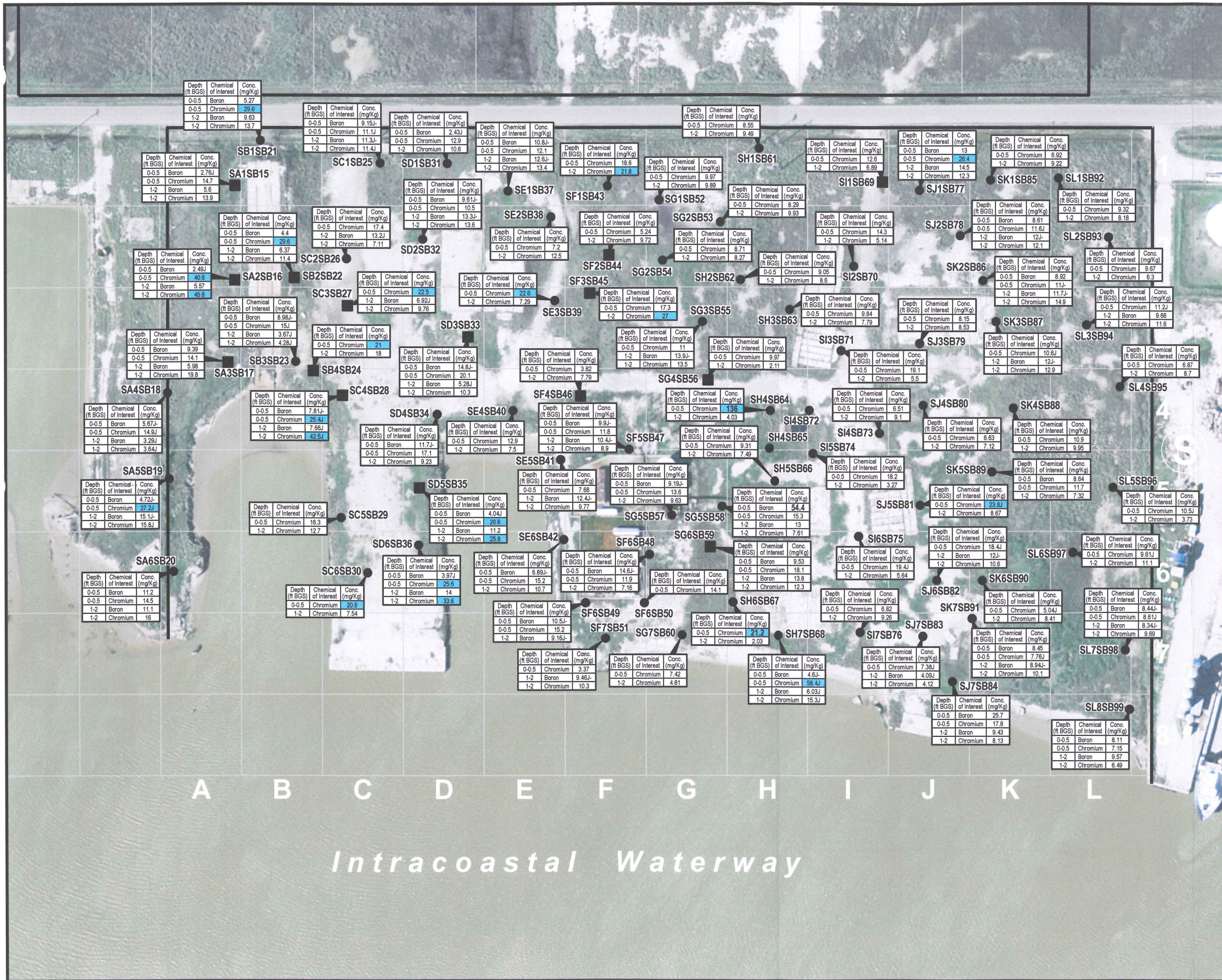
Figure 6A DETECTED CONCENTRATIONS EXCEEDING ECOLOGICAL SCREENING LEVELS FOR SOIL INVERTEBRATES* - SOUTH AREA SOIL

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: MAY, 2010	CHECKED: KHT	

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EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Shallow Soil Sample (0-2 ft)
- Shallow (0-2 ft) and Deep (4-5 ft) Soil Sample

- Notes:
1. Data Qualifiers: J = Estimated value.
J- = Estimated value, biased low.
 2. BGS = below ground surface.
 3. Light blue highlighted values are higher than maximum background concentrations (See Figure 8 for background soil data).
 4. Bold values are the maximum measured concentration for that compound.
- * The compounds shown in the figure are the compounds that were detected at a concentration greater than the screening level (See Tables 1 & 2).
The screening levels are:
Boron - 0.5 mg/Kg
Chromium - 0.4 mg/Kg



Approx. Scale in Feet

0 60 120

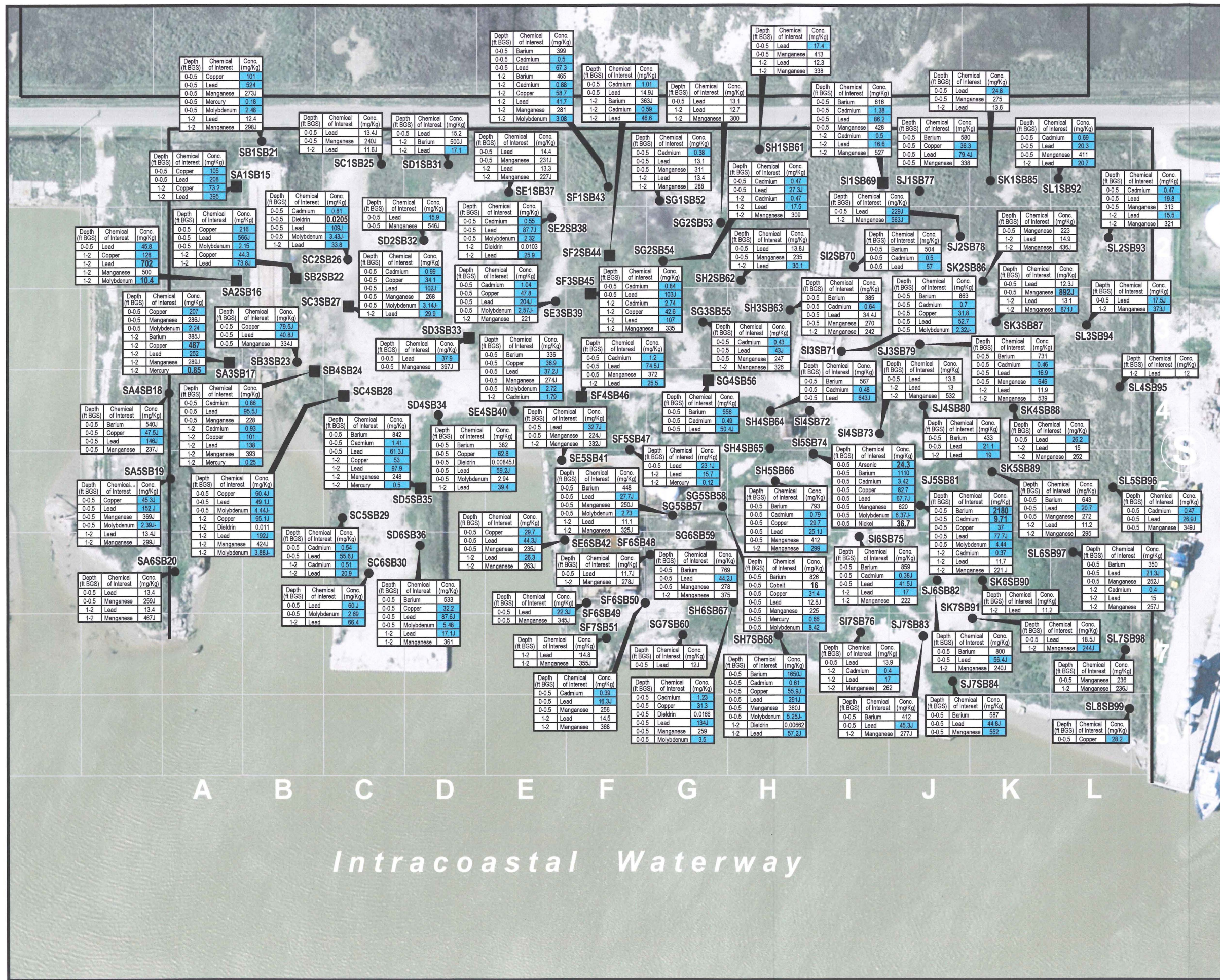
Source of photo: H-GAC, Texas aerial photograph, 2006.

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Figure 6B
**DETECTED CONCENTRATIONS
EXCEEDING ECOLOGICAL SCREENING
LEVELS FOR SOIL INVERTEBRATES***
- SOUTH AREA SOIL

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EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Shallow Soil Sample (0-2 ft)
- Shallow (0-2 ft) and Deep (4-5 ft) Soil Sample

Notes:

1. Data Qualifiers: J = Estimated value.
J- = Estimated value, biased low.
2. BGS = below ground surface.
3. Light blue highlighted values are higher than maximum background concentrations (See Figure 8 for background soil data).
4. Bold values are the maximum measured concentration for that compound.

* The compounds shown in the figure are the compounds that were detected at a concentration greater than the screening level (See Tables 1 & 2).
The screening levels are:
Arsenic - 18 mg/Kg
Barium - 330 mg/Kg
Cadmium - 0.36 mg/Kg
Copper - 28 mg/Kg
Dieldrin - 0.0049 mg/Kg
Lead - 11 mg/Kg
Manganese - 220 mg/Kg
Mercury - 0.1 mg/Kg
Molybdenum - 2 mg/Kg
Nickel - 30 mg/Kg



Approx. Scale in Feet

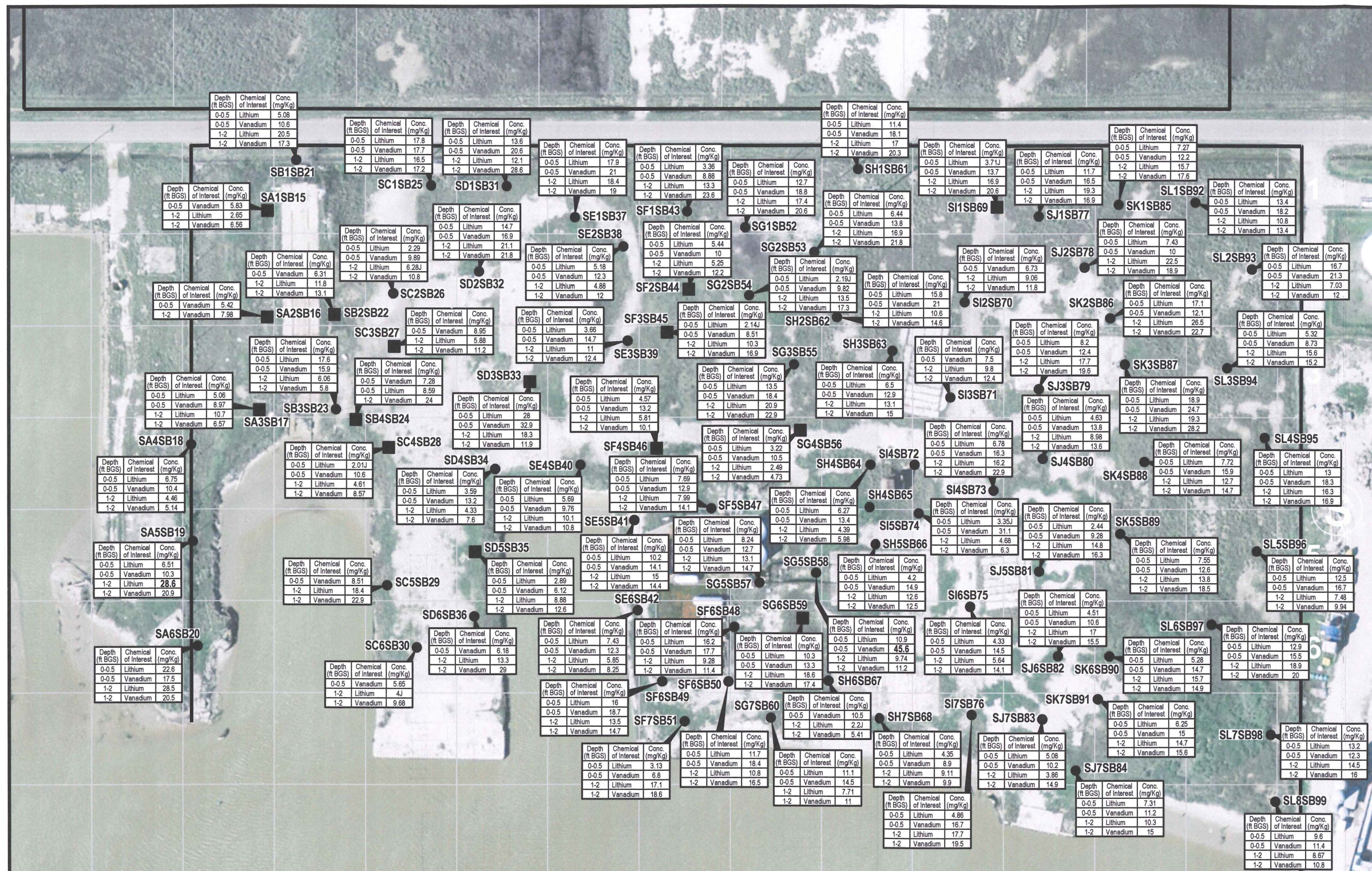
Source of photo: H-GAC, Texas aerial photograph, 2006.

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Figure 6C DETECTED CONCENTRATIONS EXCEEDING ECOLOGICAL SCREENING LEVELS FOR SOIL INVERTEBRATES* - SOUTH AREA SOIL

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EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Shallow Soil Sample (0-2 ft)
- Shallow (0-2 ft) and Deep (4-5 ft) Soil Sample

Notes:

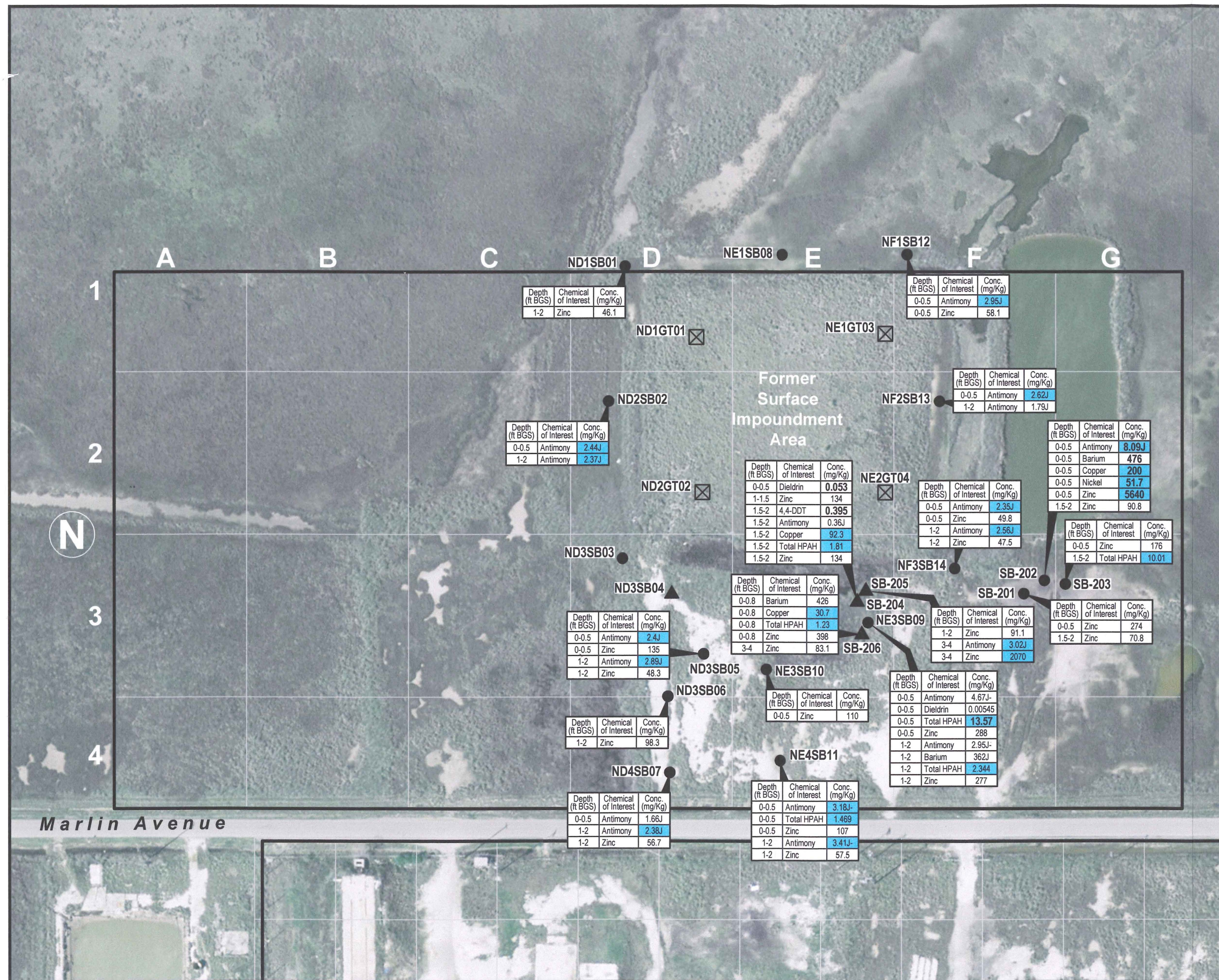
1. Data Qualifiers: J = Estimated value.
J- = Estimated value, biased low.
 2. BGS = below ground surface.
 3. Bold values are the maximum measured concentration for that compound.
- * The compounds shown in the figure are the compounds that were detected at a concentration greater than the screening level (See Tables 1 & 2).
The screening levels are:
Lithium - 2 mg/Kg
Vanadium - 2 mg/Kg

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Figure 6D DETECTED CONCENTRATIONS EXCEEDING ECOLOGICAL SCREENING LEVELS FOR SOIL INVERTEBRATES* - SOUTH AREA SOIL

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EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Shallow (0-2 ft) Soil Sample
- ▲ Shallow (0-2 ft) and Deep (4+ ft) Soil Sample
- ⊠ Geotechnical Soil Boring

Notes:

- Data Qualifiers: J = Estimated value.
 - J- = Estimated value, biased low.
 - BGS = below ground surface.
 - Light blue highlighted values are higher than maximum background concentrations (See Figure 8 for background soil data).
 - Bold values are the maximum measured concentration for that compound.
 - * The compounds shown in the figure are the compounds that were detected at a concentration greater than the screening level (See Tables 3 & 4).
- The screening levels are:
- Antimony - 0.27 mg/Kg
 - Barium - 330 mg/Kg
 - Copper - 28 mg/Kg
 - Dieldrin - 0.0049 mg/Kg
 - Nickel - 30 mg/Kg
 - Total HPAH - 1.1 mg/Kg
 - Zinc - 46 mg/Kg



Approx. Scale in Feet

0 60 120

Source of photo: H-GAC, Texas aerial photograph, 2006.

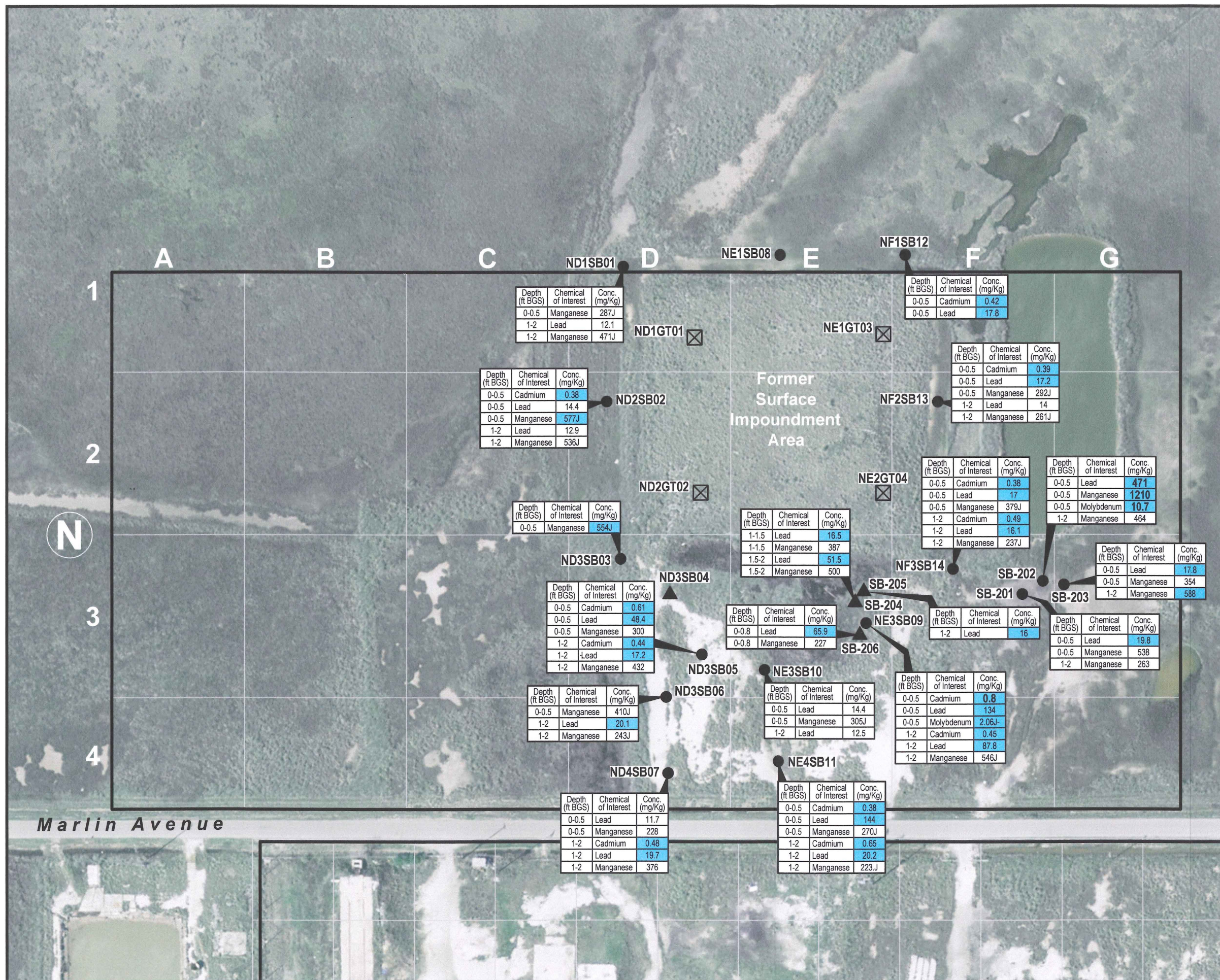
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Figure 7A

DETECTED CONCENTRATIONS EXCEEDING ECOLOGICAL SCREENING LEVELS FOR SOIL INVERTEBRATES* - NORTH AREA SOIL

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EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Shallow (0-2 ft) Soil Sample
- ▲ Shallow (0-2 ft) and Deep (4+ ft) Soil Sample
- ⊠ Geotechnical Soil Boring

Notes:

- Data Qualifiers: J = Estimated value.
J- = Estimated value, biased low.
 - BGS = below ground surface.
 - Light blue highlighted values are higher than maximum background concentrations (See Figure 8 for background soil data).
 - Bold values are the maximum measured concentration for that compound.
- * The compounds shown in the figure are the compounds that were detected at a concentration greater than the screening level (See Tables 3 & 4).
The screening levels are:
Cadmium - 0.36 mg/Kg
Lead - 11 mg/Kg
Manganese - 220 mg/Kg
Molybdenum - 2 mg/Kg



Approx. Scale in Feet

0 60 120

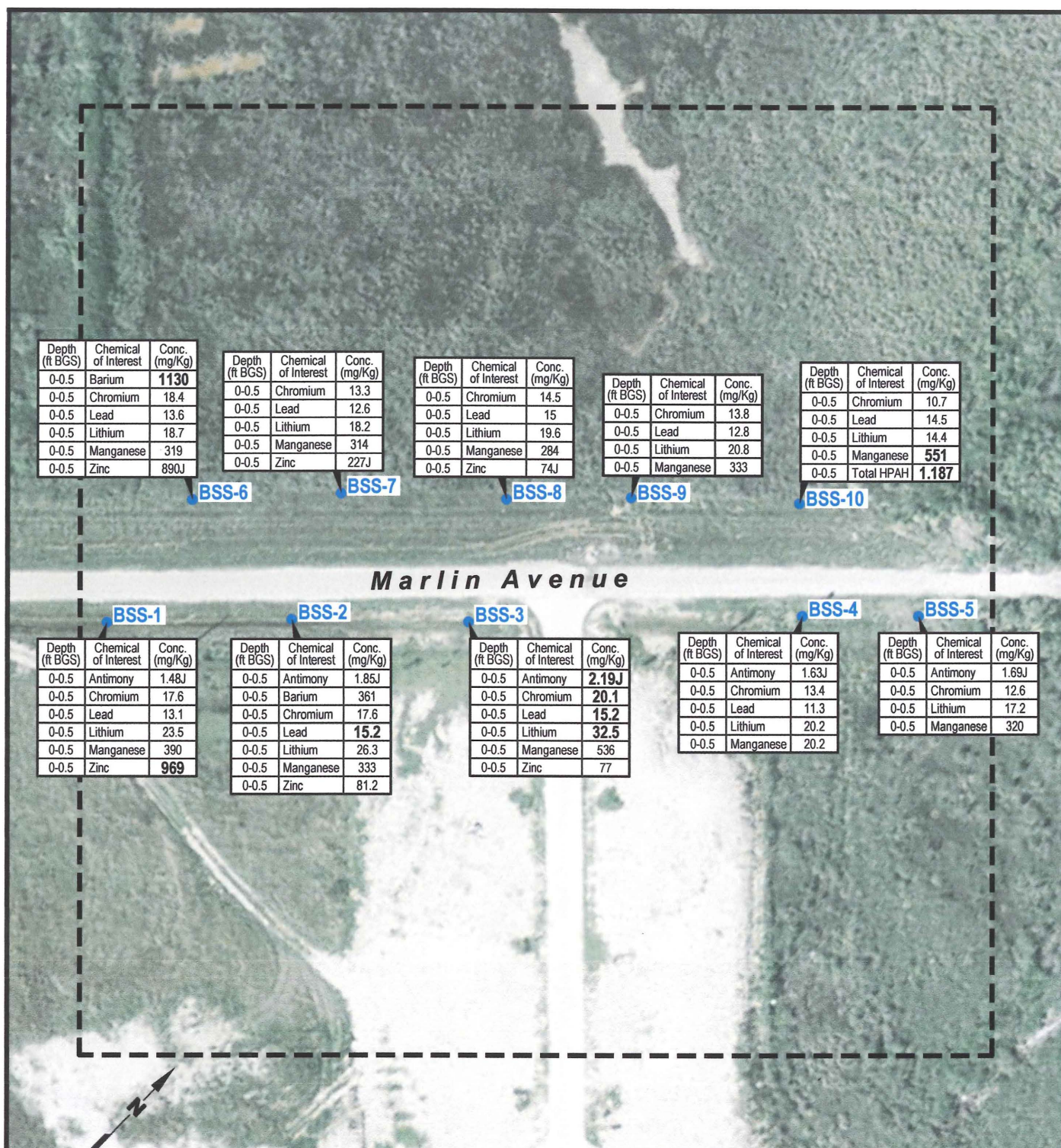
Source of photo: H-GAC, Texas aerial photograph, 2006.

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Figure 7C DETECTED CONCENTRATIONS EXCEEDING ECOLOGICAL SCREENING LEVELS FOR SOIL INVERTEBRATES* - NORTH AREA SOIL

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Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Barium	1130
0-0.5	Chromium	18.4
0-0.5	Lead	13.6
0-0.5	Lithium	18.7
0-0.5	Manganese	319
0-0.5	Zinc	890J

BSS-6

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Chromium	13.3
0-0.5	Lead	12.6
0-0.5	Lithium	18.2
0-0.5	Manganese	314
0-0.5	Zinc	227J

BSS-7

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Chromium	14.5
0-0.5	Lead	15
0-0.5	Lithium	19.6
0-0.5	Manganese	284
0-0.5	Zinc	74J

BSS-8

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Chromium	13.8
0-0.5	Lead	12.8
0-0.5	Lithium	20.8
0-0.5	Manganese	333

BSS-9

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Chromium	10.7
0-0.5	Lead	14.5
0-0.5	Lithium	14.4
0-0.5	Manganese	551
0-0.5	Total HPAH	1.187

BSS-10

BSS-1

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Antimony	1.48J
0-0.5	Chromium	17.6
0-0.5	Lead	13.1
0-0.5	Lithium	23.5
0-0.5	Manganese	390
0-0.5	Zinc	969

BSS-2

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Antimony	1.85J
0-0.5	Barium	361
0-0.5	Chromium	17.6
0-0.5	Lead	15.2
0-0.5	Lithium	26.3
0-0.5	Manganese	333
0-0.5	Zinc	81.2

BSS-3

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Antimony	2.19J
0-0.5	Chromium	20.1
0-0.5	Lead	15.2
0-0.5	Lithium	32.5
0-0.5	Manganese	536
0-0.5	Zinc	77

BSS-4

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Antimony	1.63J
0-0.5	Chromium	13.4
0-0.5	Lead	11.3
0-0.5	Lithium	20.2
0-0.5	Manganese	20.2

BSS-5

Depth (ft BGS)	Chemical of Interest	Conc. (mg/Kg)
0-0.5	Antimony	1.69J
0-0.5	Chromium	12.6
0-0.5	Lithium	17.2
0-0.5	Manganese	320

Approx. Scale in Feet

0 40 80

EXPLANATION

--- Background Soil Area Boundary (per Figure 8 of Field Sampling Plan)

BSS-1 • Approximate Background Soil Sample Location

Notes:

1. Background Area located approximately 2,000 feet east of Gulfco site.
2. J = Estimated value.
3. BGS = Below ground surface.
4. Bold values are the maximum measured concentration for that compound.

* The compounds shown in the figure are the compounds that were detected at a concentration greater than the screening level (See Table 5).

The screening levels are:
 Antimony - 0.27 mg/Kg
 Chromium - 0.4 mg/Kg
 Lead - 11 mg/Kg
 Lithium - 2 mg/Kg
 Manganese - 220 mg/Kg
 Total HPAH - 1.1 mg/Kg
 Zinc - 46 mg/Kg

Source of photo:
 H-GAC, Texas aerial photograph, 2006.

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Figure 8

DETECTED CONCENTRATIONS EXCEEDING ECOLOGICAL SCREENING LEVELS FOR SOIL INVERTEBRATES* - BACKGROUND AREA SOIL

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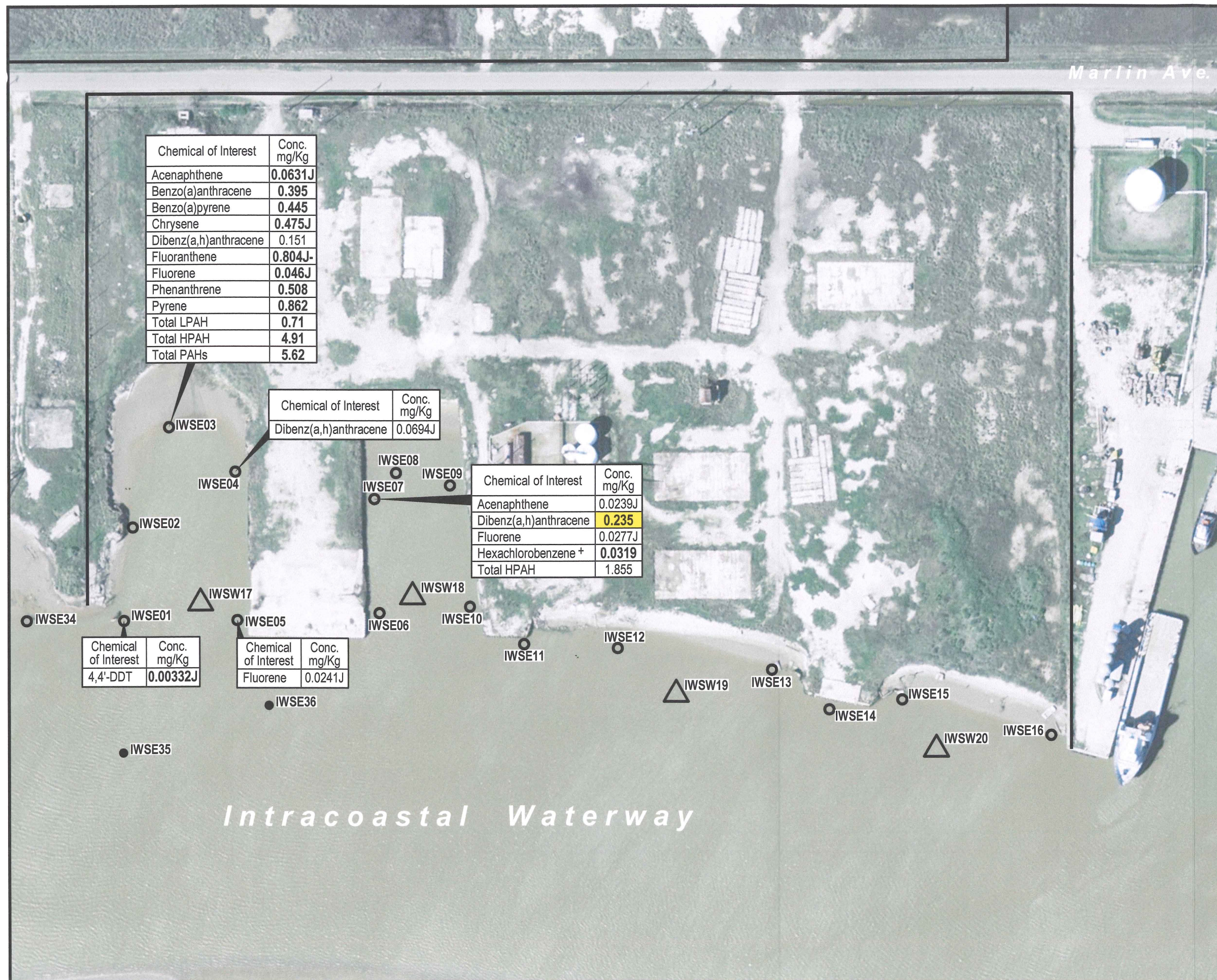
BY: ZGK

REVISIONS

DATE: MAY, 2010

CHECKED: KHT

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EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Intracoastal Waterway Sediment Sample
- △ Intracoastal Waterway Surface Water Sample
- Attempted Intracoastal Waterway Sediment Sample (not enough sediment present to allow for sampling)

Notes:

- Data Qualifiers: J = Estimated value.
J- = Estimated value, biased low.
 - Total PAH concentrations were calculated using 1/2 of the sample detection limit as a proxy value for undetected PAHs.
 - Bold values are the maximum measured concentration for that compound.
- * Values shown in the figure exceed the Effects Range Low (ERL) (See Table 6). Yellow highlighted values exceed the midpoint of the ERL and Effects Range Medium (ERM).
- + Value exceeds the Apparent Effects Threshold (AET).
- The ERLs are:
- 4,4'-DDT - 0.0012 mg/Kg
 - Acenaphthene - 0.016 mg/Kg
 - Benzo(a)anthracene - 0.261 mg/Kg
 - Benzo(a)pyrene - 0.430 mg/Kg
 - Chrysene - 0.384 mg/Kg
 - Dibenzo(a,h)anthracene - 0.0634 mg/Kg
 - Fluoranthene - 0.6 mg/Kg
 - Fluorene - 0.019 mg/Kg
 - Hexachlorobenzene (AET) - 0.006 mg/Kg
 - Phenanthrene - 0.24 mg/Kg
 - Pyrene - 0.665 mg/Kg
 - Total LPAH - 0.552 mg/Kg
 - Total HPAH - 1.7 mg/Kg
 - Total PAH - 4.02 mg/Kg



Approx. Scale in Feet

0 60 120

Source of photo: H-GAC, Texas aerial photograph, 2006.

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Figure 9

DETECTED CONCENTRATIONS EXCEEDING ECOLOGICAL SCREENING LEVELS FOR BENTHIC INVERTEBRATES* -INTRACOASTAL WATERWAY SEDIMENT

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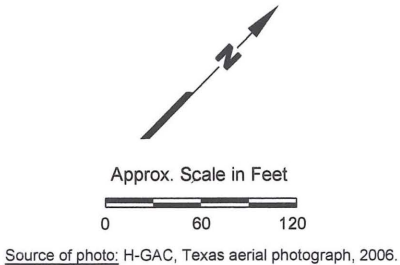
EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Pond Sediment Sample Location

Notes:

1. All samples from 0-0.5 ft depth interval.
2. Data Qualifiers: J = Estimated value.
3. Bolded values are the maximum measured concentration for that compound.
4. Light blue highlighted values are higher than maximum background concentrations (See Figure 8 for soil background data).

* Values shown in the figure exceed the Effects Range Low (ERL) (See Table 9). Yellow highlighted values exceed the midpoint of the ERL and Effects Range Medium (ERM). The ERLs are:
4,4'-DDT - 0.0012 mg/kg
Zinc - 150 mg/kg



Source of photo: H-GAC, Texas aerial photograph, 2006.

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Figure 12
**DETECTED CONCENTRATIONS
EXCEEDING ECOLOGICAL SCREENING
LEVELS FOR BENTHIC INVERTEBRATES*
- PONDS SEDIMENT**

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Chemical of Interest	Conc. (mg/L)
Dissolved Copper	0.011J
Total Acrolein	0.00929J

Chemical of Interest	Conc. (mg/L)
Dissolved Copper	0.0053J

Chemical of Interest	Conc. (mg/L)
Dissolved Copper	0.0068J

EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Wetland Surface Water Sample Location

- Notes:**
- 1. Data Qualifier: J = Estimated value.
 - 2. Light blue highlighted values exceed concentrations measured in background surface water (See Figure 13 for background surface water concentrations).
 - 3. Bolded values are the maximum measured concentration for that compound.
 - * Values shown in the figure exceed the TCEQ Ecological Benchmark for Water (See Tables 12 & 16).



Approx. Scale in Feet

0 60 120

Source of photo: H-GAC, Texas aerial photograph, 2006.

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Figure 14
**DETECTED CONCENTRATIONS
EXCEEDING ECOLOGICAL SCREENING
LEVELS FOR AQUATIC RECEPTORS*
- WETLAND SURFACE WATER**

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Chemical of Interest	Conc. (mg/L)
Dissolved Silver	0.0027J

Chemical of Interest	Conc. (mg/L)
Dissolved Silver	0.0021J

Chemical of Interest	Conc. (mg/L)
Dissolved Silver	0.0029J

Chemical of Interest	Conc. (mg/L)
Dissolved Silver	0.00094J

Chemical of Interest	Conc. (mg/L)
Dissolved Silver	0.0014J

Chemical of Interest	Conc. (mg/L)
Dissolved Silver	0.00095J

EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- △ Pond Surface Water Sample Location

- Notes:
- 1. Data Qualifier: J = Estimated value.
 - 2. Bolded values are the maximum measured concentration for that compound.
 - 3. No compounds were measured above background concentrations (See Figure 13 for background surface water concentrations).
 - * Values shown in the figure exceed the TCEQ Ecological Benchmark for Water (See Tables 13 & 17).



Approx. Scale in Feet

0 60 120

Source of photo: H-GAC, Texas aerial photograph, 2006.

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FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 15
**DETECTED CONCENTRATIONS
EXCEEDING ECOLOGICAL SCREENING
LEVELS FOR AQUATIC RECEPTORS*
- PONDS SURFACE WATER**

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